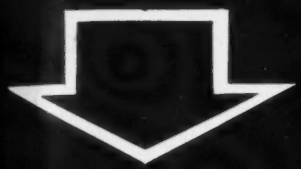

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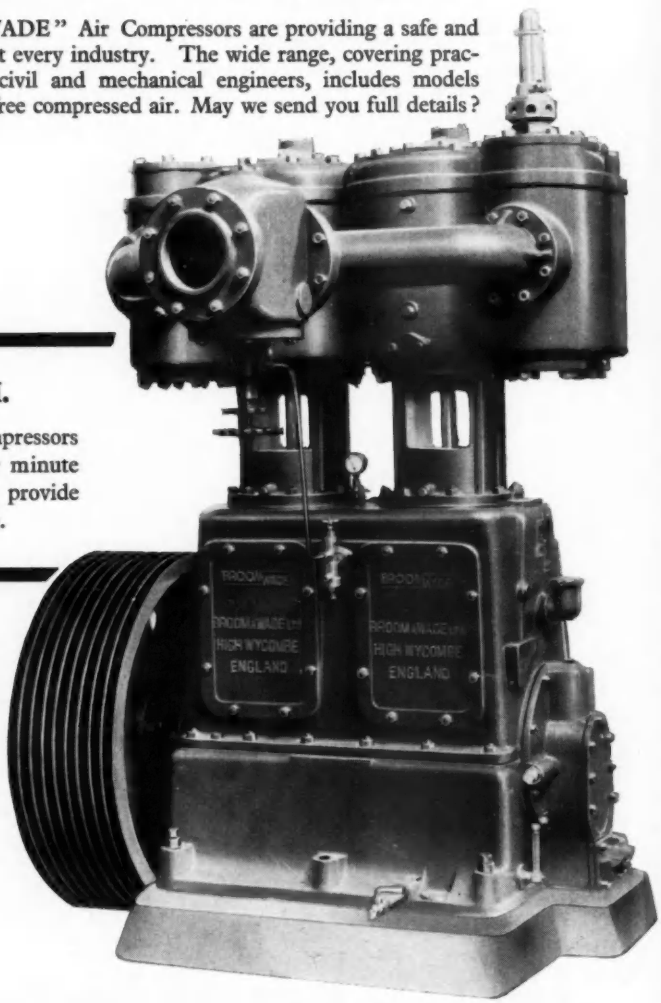

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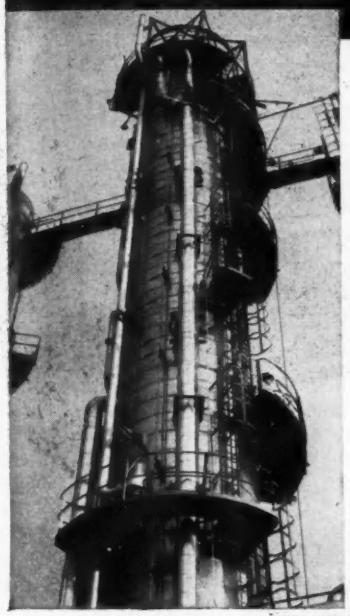

(Left) One of the 120ft. high regenerator vessels supplied by Babcock for the "Benfield" gas-purification plant at the Scottish Gas Board's "Lurgi" installation, Westfield, Fife.

(Below) The boiler-house, equipped with three 45,000 lb./hr. Babcock Bi-drum boilers with "Ignafluid" firing, and (centre) two benzol-absorber towers supplied by Babcock.

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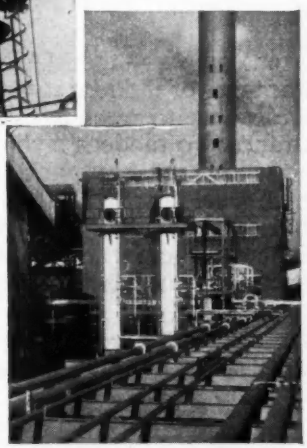

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Gas Journal

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WEDNESDAY, OCTOBER 4, 1961

CONTENTS

EDITORIAL COMMENT

Clean Air, 1961 - 9
South Eastern Survey - 10
French Statistics - 10
Goodbye Mr. Therm? - 10
Exoticism - 11
The Hevac Conference - 11
Briefly - 11

SPECIAL ARTICLES

Engineer—A Title Worth Keeping. By W. H. Johnson - 12
Gas Liquor as a Larvicidal Agent. By F. Clifton Sherriff - 13
Canadian Natural Gas Moves South into United States. By Hugh G. Jarman - 14

BOOK REVIEWS - 16

NEWS SUPPLEMENT

How the Other Side Fared - 19
New Powers Urged to Run Giant Gasworks - 19
Winter Comfort for Shoppers - 19
Power for Industry - 19
'Shoestring Hostesses' - 19
More Natural Gas Discoveries in Italy - 20
Gas Exhibits for Five Trade Shows - 20
The Aintree Princess - 20
New Phimax Source Will Supply 1,200 Tons Weekly - 20
B.S.I. Has a Record Year - 20
Gas Struck at Winnathoola - 20
North Western Board Appointments - 21
Tragedy Casts Shadow Over I.G.E. Meeting - 21
Personal Notes - 22
Obituary - 22
Coming Events - 22
Trade Notes - 22

GAS IN INDUSTRY SUPPLEMENT

Editorial: More Applications in the Foundry - 211
Gas Helps Skefko To Turn the Wheels of the World. By Eric Ford. - 212
Gas for Drying and Pre-heating Foundry Ladles. By G. Holmes and K. G. Rhodes - 220
250 Lunches and 1,000 Cups of Tea—by Gas - 224
New Tube-firing Burner for Immersion Heaters - 225
Northern Board Installs Overhead Radiant Heating 226

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Publishers' Notice, See Page 402, September 27, 1961.

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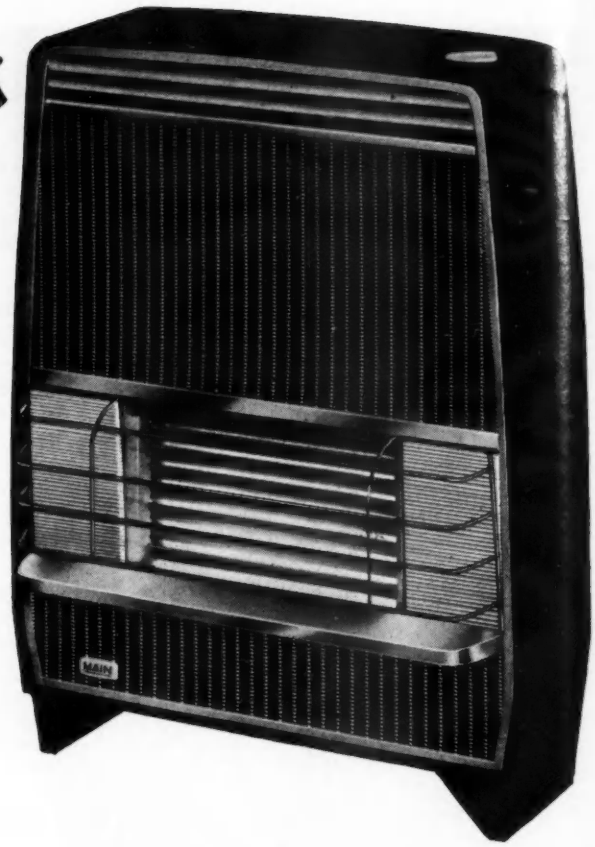

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P 126

Gas Journal

COKE OVENS • BY-PRODUCTS • CHEMICALS

Clean Air, 1961

THE annual conference of the National Society of Clean Air opened in Brighton this morning. Last held there 15 years ago, it was the first full conference possible after a seven-year break; some 400 delegates attended, a small enough number for the meetings to be held in the Music Room of the Royal Pavilion. This small number, however, was nearly double the pre-war figure.

Today some 1,000 delegates will assemble at the Dome to listen to papers and reports, and will take part in discussions to do with the vital need to curtail the degree of atmospheric pollution from both industrial and domestic chimneys.

The growth of this movement is of interest principally because it shows what a handful of resolute men and women can do when convinced that they are voicing a real need.

Started as the Coal Smoke Abatement Society in 1899, at a time when plentiful cheap coal might make any idea of fuel economy or care in its use by industry or householder appear unnecessary, the Society did much valuable pioneering work in making the public understand that clean air was not an impractical fad of a few cranks. In 1909 a provincial association was founded under the name of the Smoke Abatement League of Great Britain. These two bodies amalgamated to form the National Smoke Abatement Society of Great Britain in 1929, a name retained until 1958 when the present title was adopted.

The increasing importance of these annual conferences may be gauged by the decision to prolong this year's conference by an extra session on Friday afternoon, when the main theme will be the 'Operation of the Clean Air Act: Smoke Control Areas'; perhaps as important a subject as any to be discussed at the conference. Under this particular heading will be included considerations of the availability of solid smokeless fuels —both natural and manufactured—gas, electricity and oil.

This year's conference is to be formally opened by Mr. John George, Parliamentary Secretary to the Ministry of Power, which in itself seems significant. It recognises the Government's concern in the carrying out of the Clean Air Act to the letter, for there must never be the smallest possibility of the Great Smog of 1952 being repeated.

The Society's President this year is Lord Cohen of Birkenhead, Professor of Medicine at Liverpool University, and his address to the conference will almost certainly stress the effect of polluted atmosphere on the health of the population. The death rate from chronic bronchitis is higher in England than in Scandinavia, for instance.

In fact, it is about 50 times greater than in Denmark and 20 times that of Norway and Sweden. If the cause of this scurge is a polluted atmosphere it should be possible to take particular notice of the effect of the smoke control areas on its decrease, provided that other factors do not interfere.

The campaign for clean air has reached an important stage in that there is now a tendency to play down somewhat the importance of grit deposit measurements in large urban areas. With the implementation of the Clean Air Act by many authorities and the creation of some control areas, it is becoming of greater importance to measure the sulphur dioxide content of the atmosphere, and thus to estimate the probable acidity of the rain falling on buildings in a heavily built up area.

The Clean Air Act does not make provision for restricting this particular nuisance provided smoke and grit from chimneys are reduced. This particular restriction may be the next step forward in the aims of the Clean Air Society.

Clearly, if the reduction of sulphur dioxide in flue gases is to be insisted upon, either special scrubbing arrangements will have to be installed or else low-sulphur fuel will be a necessity. On this particular score gas might well come into its own, and it was noticeable from the programme that a paper is to be read on the last morning of the conference on whole-house heating by Mr. W. F. B. Shaw, of the Warren Springs Laboratory. This will presumably deal with central heating systems fired by all types of smokeless fuel, including electricity.

Since gas is equally applicable to hot-air, as well as hot-water, heating, it should be particularly suitable, especially if its total sulphur content continues to be reduced.

South Eastern survey

THERE is nothing like knowing where your potential is. The South Eastern Gas Board has undertaken a general domestic survey which has revealed the surprisingly wide scope for selling open to their sales staff—surprising, because this is an area enjoying a relatively high standard of living and in which gas has been vigorously sold for a long time.

Take home laundry for example. A lot of heads shake when the prospects for selling gas-fired home laundry equipment is mentioned, and yet in the south-east the statistical section of the Commercial Manager's Department has found that in 53% of homes all laundry is done at home (only 4% make regular use of launderettes), clothes are regularly sent to the laundry by 42% of all households, and 41% have no laundry appliances at all.

Other figures show that 25% of households have an electric refrigerator, while 7% have gas refrigerators and 85% of households still use solid fuel (not counting coke) for space heating; only 7% so far use gas to heat at least one main living room and only 18% of households have a gas poker.

The Board's sales newspaper, *Segas Sales News*, points out that one stumbling-block salesmen come up against when selling room-heaters is the back-boiler. And yet only 19% of householders have a back-boiler, and of these about half already have an immersion heater for alternative water heating anyway.

French statistics

THE latest statistics for the French gas industry, published in Statistiques Officielles de l'Industrie Gazière en France for 1960 by the French Ministry of Industry, give an interesting indication of its structure and a very complete picture of the total gas available in France from all sources. The part played by the Industrie Gazière, which includes Gaz de France and Municipal and non-nationalised undertakings, in the supply of gaseous fuel to consumers throughout France is seen to be similar to the British gas industry, though industrial consumers may be supplied independently from all available sources, which include large volumes of blast furnace gas, and coal gas from both steelworks and colliery coke ovens which are not handled by Industrie Gazière.

The total disposable gas from all sources in the year under review amounted to 3,064 mill. therms which included 791 mill. therms from Industrie Gazière and 819 mill. therms of natural gas, the balance consisting of coal gas from steelworks and colliery coke ovens, methane from mines, blast furnace gas and refinery gas. Of this disposable gas, the total sales by Industrie Gazière amounted to 709 mill. therms, the majority of which went to domestic consumers, 439 mill. therms, while industry accounted for 163 mill. therms and commercial consumers 115.5 mill. therms.

The total quantity of gas consumed by industry, however, amounted to 2,405 mill. therms which included 1,049 mill. therms of blast furnace gas, 793 mill. therms of natural gas, 382 mill. therms of coke oven gas from steel works and colliery coke ovens, and 162 mill. therms of refinery gas. Of these industries the largest consumer was the electricity industry which took a total of 1,013 mill. therms; this total included .2 mill. therms from Industrie Gazière, 381 mill. therms of natural gas and 623 mill. therms of blast furnace gas.

In the last ten years there have been marked changes in both the raw materials for gasmaking used by Industrie Gazière and in the sales of gas. Oil used in gasmaking has dropped to 69% of that ten years ago, while petroleum products—including refinery gas—have increased by over five-fold and natural gas over nine-fold, while coke made for sale has dropped by 14%. Gas sales have risen by 67%.

The population now served by Industrie Gazière amounts to some 25 mill., the total number of consumers is about 6½ mill. of which nearly 6.1 mill. are domestic; some 117,000 have special meters installed for domestic heating.

Consumption per separate meter during 1960 was on average 70.56 therms, and for each special house-heating installation, separately metered, the average was 156.04 therms. Domestic appliances in use per 1,000 domestic consumers varied between 329 water heaters and four refrigerators to 155 radiators and 90 washing machines; there were 97 bath heaters and 18 gas-fired central heating boilers for every 1,000 domestic consumers.

Goodbye Mr. Therm?

A GREAT deal of gas board advertising is appearing in newspapers and publications of all kinds, perhaps more than ever before, but it is undergoing a certain change. Something once familiar and almost taken for granted is becoming conspicuous by its absence. That something is Mr. Therm.

It is a good many years now since this ingenious and friendly little figure was adopted by the industry as its symbol. It became probably the most successful and enduring symbol of its kind in the world. Everyone came to recognise it and perhaps to regard it with some kind of affection. The brilliance of the original conception, the misleading simplicity of the design and the ease with which it could be adapted to a multitude of purposes combined to make Mr. Therm—or Therm, as some would have it—synonymous with gas.

The design was in fact so good that it seemed ageless. While other symbols waxed and waned Mr. Therm twinkled on year after year, appearing now in a chef's hat, now in a kilt, performing an astonishing variety of operations. He was cut out of hardboard, copper and stone; he blazed in fiery neon and in floodlit glory. He smiled his innocent smile from matches, playing cards, badges and wallets. He decorated vans and even appeared on ice. Alas, sometimes he became deformed, his halo of ten flaming curls growing to eleven, his limbs thickening or elongating, his eyes becoming too close or too far apart. But his smile never wavered and he never became anything other than Mr. Therm.

Contrary to the belief of many people, ourselves included, it now looks as though our cherubic friend is beginning to be regarded in certain quarters as just the smallest bit passé. And indeed there is something about him which smacks a little of pre-war days. Is he perhaps starting to get on people's nerves?

At all events there seem to be more and more advertisements on which he does not appear, and far from being the worse for it some of them seem better. Of course, this does not mean that Mr. Therm is to be discarded entirely. But it may well mean that he will make an appearance only when a display lends itself to the framing of his individual and engaging personality.

However, before we are in too much of a hurry to relegate Mr. Therm to limbo, let us not forget that the word 'gas' has precious little attraction for the public, while 'Gas Board' hardly warms the cockles of the heart. But Mr. Therm is personal, familiar, and immediately symbolises gas. Why then do we not speak of 'Therm cooking' or 'Therm central heating'? Used in this way, if in no other, Mr. Therm should still have quite a future.

The Hevac Conference

INTRODUCING the International Conference on Heating, Ventilating and Air Conditioning, the Chairman of the Management Committee, Mr. J. R. Paterson, reminded us that British engineers have been given the opportunity in recent years to attend conferences in Europe devoted to heating, ventilating and air-conditioning engineering; and that the Belgian profession was quick to use the occasion presented during the Brussels Exhibition to arrange the first International Conference devoted to this specialist branch of engineering. Delegates who attended the Brussels conference will recall that, at the closing meeting, it was resolved that the organisation of international conferences should continue.

The Institution of Heating and Ventilating Engineers, which represents those British engineers in technical and scientific matters, has acted upon the Brussels resolution, and so the Hevac Conference is being held at Olympia from September 27 to October 4.

In the past there have been a number of conferences and exhibitions in Britain in which the science and practice of heating, ventilating and air conditioning have been included as but a small part of a general theme. With the growing importance of this specialised subject and the rapidly expanding industry, the need has become evident of a conference devoted entirely to heating, ventilating and air conditioning. This, the first International Conference of its kind to be held in Great Britain, is being organised by the Institution in co-operation with the Association of Heating, Ventilating and Domestic Engineering Employers and the Heating and Ventilating Research Association.

The organisers have wisely chosen three themes for discussion. Theme 1—Administrative advances likely in the next ten years—has eight papers; Theme 2—Technical advances likely in the next ten years—has nine; and Theme 3—Integrated design of architectural and engineering services for economy of building construction—has five.

Exoticism

WHEN a gas board, all too often the butt of those determined to accuse any nationalised body of red tape and slightly comic inefficiency, is described in print as 'the most exotic commercial undertaking in Britain' one naturally sits up and takes notice. The object of this fulsome compliment is the North Western Gas Board, whose Chairman, Mr. D. P. Welman, was the subject of a feature article in *Time and Tide* last month, entitled 'The Electric Gasman'.

Mr. Welman is described as 'walking disproof of the popular myth that officials of state-run industries must be faceless, nerveless bureaucrats', and a great deal is said about his elegance, eloquence and personality. Indeed, the writer waxes so lyrical on the subject that we cannot resist quoting a eulogistic chunk:—

'At first glance Mr. Welman looks like the director of a Madison Avenue advertising company or the deputy military governor of a conquered state. At second glance he looks like the chairman of a Madison Avenue advertising company or the supreme military governor of a conquered state who has just signed on for a series of TV talks. Macmillan addressing the Tory conference can scarcely compare with the way Mr. Welman presides over the mass annual conference of the North-Western Gas Board.'

We do not for a moment dispute the truth of all this, although in other passages the writer clearly finds it difficult to differentiate between solid results and good publicity. What pleases us is the fact that any board should achieve this kind of write-up. It does the industry a power of good.

BRIEFLY . . .

BADMINTON and the gas industry? Well, yes, there is a connection and we will pardon your raised eyebrows while we re-adjust our own. What it really boils down to is that a South Eastern Gas Board District Representative with 38 years in the gas industry has rushed into print with an informed volume for the Elliott Right Way series on 'The right way to play badminton.' He is Cyril Rangecroft who, gas apart, is badminton instructor for London Evening Institutes.

●

WHILE we were glancing through the latest issue of 'E.G. News' we were intrigued by the story of a gasfitter at St. Ives who literally got into hot water while disconnecting meters during a house fire—some of the dripping gallons from a blazing thatched roof were uncomfortably warm as they cascaded down. However, the report says: 'A beautiful old thatched house . . . was damaged recently by fire and four brigades were needed to bring it under control.' Now that sort of house should really be persuaded to keep its thatch on and not get burned up so quickly, don't you think?

●

THOSE dial reading cards which meter readers frequently leave for the householder's personal attention develop a habit of returning from seaside resorts and holiday centres during the summer months having been forgotten in the rush of departure. Mr. E. H. Phelps, senior clerk at Harpenden for the Eastern Gas Board, had one which, 'E.G. News' tells us, really went one better. Indeed, it may be said to have had a yen for travel for, although left at a Harpenden home on August 17, it was returned to the rental department on August 23, having been posted in Tokyo two days earlier. You can imagine the look of surprise those two attractive Japanese stamps raised. We can only agree with Mr. Phelps, who feels that the Board is more Eastern than might be imagined.

●

TRANSLATION into English of all twelve issues of the Russian welding journal, 'Avtomaticheskaya Svarka' ('Automatic Welding') for 1960 has now been completed by the British Welding Research Association, Cambridge. While much of the Russian work parallels that carried out in this country, the regular appearance in 'Automatic Welding' of papers on non-conventional, but often surprisingly practical, techniques, coupled with forthright discussions at all levels on all aspects of welding and mechanisation, fully justifies the decision of D.S.I.R. to sponsor its translation.

'ENGINEER'—

A TITLE WORTH KEEPING

By W. H. Johnson

WITH the same feeling with which one discovers half a slug in the salad, I came upon an almost parenthetic remark made at a recent meeting, 'we're all in management.' It was not Sir Miles Thomas addressing the Institute of Directors, either, but a speaker standing in front of a junior association. The audience, one hopes, included pupils, chemists, shift supervisors, assistant mains engineers and the usual cheerful miscellany which makes up a junior association.

One way to sort the sheep from the goats is to count the sheep and then to calculate the goats by difference. Ergo, if you come in at nine instead of eight, and sign the book instead of punching the clock, you are 'in management.'

Bearing in mind the subject of the address and the particular qualifications of the speaker, one cannot fault his logic or his sincerity, but it is appalling to think that he might be taken seriously too widely.

The motor car industry, to take one example, is a little like that—consisting of management and others. They lack a sense of cohesion, and are split into the two camps of 'Them' and 'Us.'

There can be little doubt that this gratuitous admission to the status of management caused some of the audience to perk up with pride and pleasure, for 'management' is a vogue word. It conjures up a picture of the two-car family, holidays in Teneriffe and cocktails at the club. Like some more of our industrial concepts, it was flogged *ad nauseam* by the Americans and then exported in shabby condition.

One sign of a vigorous or boisterous society is that it produces hypotheses of all sorts at a great rate without always fully digesting them. But, good or bad, they spill over the borders and are seized upon eagerly by others who are, for one reason or another, living in a mild vacuum.

The effects which this has on a national scale are everywhere apparent, and in more than one continent. It is surely important to be on our guard against reducing the gas industry simply to an administrative élite on the flimsy grounds that it is fashionable.

If this seems to be making a lot of fuss about a small matter, let us not forget that the boy who put his finger in the hole in the dyke once saved Holland. Or to come nearer home, let us look at the gas industry as it was, paying 7½% or more as it ploughed a cheerful and allegedly inefficient way through life; and let us look at it as it is, if it can be seen beneath the pyramid of staff which has descended upon it like—unhappy simile—a snuffer on a candle.

But to come back to this junior association, on the principle that good habits begin in the nursery. If its members were not just there for the day out they may have gone away in awe, thinking 'I'm in management,' or 'I'm management material,' or some such cliché which may be found in one of the many superfluous books on the subject. Pride and self-revelation are fine things, always provided that they are worthily inspired. The difficulty lies in seeing and agreeing what is worthwhile.

Management—to fabricate a definition without benefit of text book—implies a measure of control over people and services or materials. There does not have to be a tangible end product wrought by skill and experience. One of the best examples of planned management must surely be the army; a man who builds a bridge has all the attributes of the definition, but whoever heard of a bridge manager—or, if you like, a civil manager?

There is—there must be—a pride in being an engineer, and there must be many of us who have derived satisfaction from answering the question 'profession?' by saying 'gas engineer.' Would you, honestly, have felt so confident of the backing of your years of study and experience in answering 'I'm in the gas industry. On the management side?'

Certainly the emphasis of effort in the gas industry has changed in recent years. Fewer people leave tar stains on the hands of those whose hands they shake. But this does not alter the basic engineering nature of the industry. A fairly recent feat of some magnitude was the construction of the North Wales grid.

The work was planned, supervised and carried out by engineers. If there was a manager in sight he was probably in charge of the mobile canteen, and an old-fashioned air of efficiency covered the whole operation.

The Institution, which was once a rather exclusive club for engineers, has been getting blurred at the edges in recent years, through extending membership to the industry generally.

There are even signs that the non-engineers are getting their feet under the table, and it can do no harm to remind them gently that they are guests in an engineering association. Otherwise we may one day find a motion to change the name to the Institution of Management of the Gas Industry.

Dabbling in management for industry is not new, even in this country, and experience suggests that it could do the industry a great deal of harm, but little good. For a start, a proportion of the recruits to it have been basically unsuitable. A young man can't use his hands, he's not much good at figures, and his future seems black, till he hears about management training. Then, polish up the celluloid collar and have a go.

At the other end of the scale is the bright recruit who has an honours degree, and he will probably assimilate the training very well.

But he will still not be what a vital gas industry needs. For the gas industry has a vitality which springs from its very roots in fuel engineering, and a man who can neither distinguish between 1,000 and 1,200°C. with his eye, nor between sewer gas and ground gas with his nose, would be better employing his talents managing a trust fund, or a chain store.

There is already ample overburden of the non-engineering type in the industry today, and in the nature of things it will increase as little departmental empires are brought into being. To spread the idea among the innocent minority who are actually engaged in production and distribution that they are heirs to that sort of throne is wrong.

Once a recruit gets the idea that his knapsack contains a square of carpet he takes care of his fingernails and always wears a good suit in case 'They' send for him.

That is not the way to become or to remain an engineer.

Gas liquor as a larvicidal agent

By F. Clifton Sherriff

BRIEF reference has been made in 'GAS JOURNAL' (June 14, page 400) to experiments in the control by gas liquor of the larvae of parasitic worms which cause such havoc among cattle and sheep.

A copy has been received of the results of these preliminary tests, which were carried out under veterinary supervision and authenticated by a leading veterinary research bureau.

Hitherto the only treatment for parasitic infestation has been to control, with such drugs as are available, the adult worms within the body of the animal. Such drugs are not only expensive but usually give only temporary protection.

Moreover, parasitic infestation can easily reach a dangerous level before serious notice is taken of the symptoms —before, indeed, they are very obvious at all—with the result that the animal receives a setback from which it may take months fully to recover, even if death does not intervene.

A step forward

It would therefore be an enormous step forward to control the infective larvae *before* they are ingested. The problem has been to find a larvicidal agent which, when applied to the grass in sufficient volume to control the larvae, does not also kill the grass, or is not put right out of court on the score of cost.

Circumstantial evidence over a number of years suggested that such an agent might exist in gas liquor in the simple form in which it is applied as a nitrogenous fertiliser.

Experiments were undertaken to discover whether there was any truth in the evidence so far observed. They were in two parts—the one dealing with the animal and the other dealing with the grass.

It will be appreciated that in field trials of this kind one can deal only with such larvae as happen to be on the grass or in the faeces at the moment the samples are taken. (It is possible for an animal to be heavily infested but for an individual sample to show up negative.)

It so happened that the samples taken included neither husk nor liver fluke larvae—possibly because gas liquor has been used regularly on this farm for a number of years.

Nevertheless, it is reasonable to assume that the degree of control would be broadly similar since the husk larvae (Metastrongyle) at any rate are within the same main group as some of the other larvae present in the samples.

Bearing in mind, therefore, the limitations of any *in vivo* test of this nature, examination of the results indicates fairly effective control of free-living (non-parasitic) nematodes—which is not particularly significant or useful—but little difference in the numbers of infective larvae.

On the other hand—and this is the important part of the laboratory report—one would have expected an *increase* in the numbers of infective larvae at the time of year (Spring) when these trials were carried out.

It does seem likely, therefore, that gas liquor restricts the development of large numbers of larvae in the grass.

Certain further inferences may be drawn from these tests:

First, that such control as has been established is probably only temporary in any single application of liquor, though cumulative over the years inasmuch as the stock are being subjected to less and less infection and are returning less infective larvae to the land.

Secondly, re-infection of treated pasture can take place rapidly when grazed by infected stock. Counts taken over other fields on the farm showed little difference two months after application where grazing had taken place in the interval compared with untreated fields.

This points to the desirability of applying liquor little and often to obtain pest control—that is, at 330-400 gal./acre of 10-oz. liquor early in the year, before growth begins, and again after each subsequent cut or bite.

Spraying technique

Moreover, since the larvae are lodging on the foliage a spraying technique is necessary, rather than the normal trickle discharge, in order to get complete coverage.

These tests contribute another chapter to the sum of knowledge of this increasingly popular fertiliser and add yet another selling point to its already formidable list of advantages over the traditional forms of nitrogen.

While it would be unwise to assume on the strength of these preliminary experiments that gas liquor is an absolute larvicidal agent, the results are sufficiently encouraging to suggest that further research would be well worth while.

Canadian natural gas moves south into United States

Desert sands provided problems, but this giant ditcher was well able to cope as Trans-Canada Pipelines proceeded with the laying of a Southern pipeline which passed through every possible type of terrain.

WITH the vast impact of natural gas upon 10 million Canadians, which has been likened to a new industrial revolution—the gas which has made possible the manufacture of hundreds of new products in Canada, either in by-products or through plants using natural gas. Each week some 1,200 additional Canadian homes are being connected to the distribution systems which are still working east and north-east.

With hardly a stop for a breathing spell, the pipeline engineers, designers and crews turned their eyes south into

By Hugh G. Jarman

the rich United States markets which would bring back dollars for gas—an export product which flows across the boundary between the two countries—without a thought of customs, a source of wealth which flows freely in spite of 120°F. in the summer and 60° below zero in the winter—weather cannot stop it.

In April 1960, after months of the most extensive examination of reserves of Canadian natural gas, and its present and future market requirements in Canada, the National Energy Board of Canada gave permission to export gas into the U.S. Engineers and designers plans were ready, the proposed route had already been surveyed and right-of-way options secured by Trans-Canada Pipelines.

The day permission to export was granted, engineers and pipeline crews began to move. Within days trainloads of huge 30-in. diameter pipe began to arrive at Winnipeg, Manitoba.

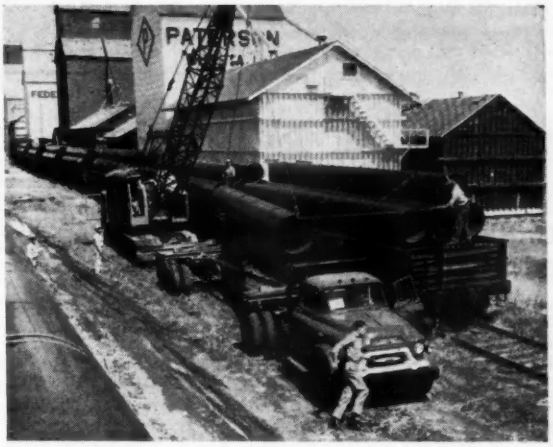
Tapping into the 34-in. diameter main trunk line from the Alberta gas fields where over 22 bill. (10^{12}) cu. ft. of gas reserves are waiting to be released, the big ditching machines were slowly making their way south across Manitoba to the United States international border, the crossing to be made at Emerson. Ironically the route taken was the same as the ox cart, and dog sleigh trails of the historic Red River Valley, and later followed by the Canadian Pacific Railway, whose engineers accidentally struck the first gas well, while drilling for water for their wood burning locomotives. In those days striking gas was a nuisance, for the gas caught fire and burned down the railway maintenance centre.

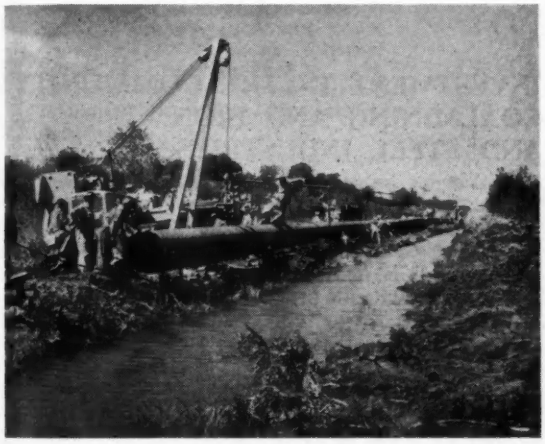
The laying of this southern pipeline passed through every possible type of terrain. The crews worked through the hot and cold Prairies, where the ditchers ran for miles through soil so fine it ran back into the ditch, they passed through miles of growing wheat fields, working side by side with farmers who were beginning to harvest their grain.

Leaving the pleasant side of their jobs, the ditchers passed through swamplands, where ditches backfilled as fast as the ditchers passed by. Powerful mobile pumping units were called into action to pump out a short section of ditch at a time to allow from one to two sections of pipe to be laid as the water flowed back in. Here welders worked knee deep in water and slime frantically trying to keep ahead of the rising water. As the line was laid,

Supplies of 30-in. dia. pipe (right) were brought in by train overnight. Stringing crews were at work by dawn. The picture shows the pipe being trucked to the right-of-way towards the U.S. boundary.

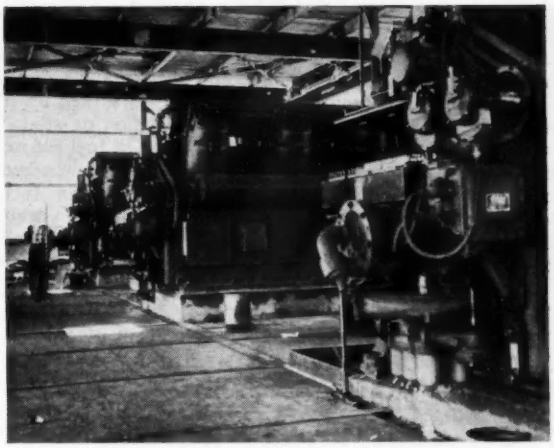
Pipeliners and wheat farmers work side by side. Left: A huge pipe bending machine is passing through a Manitoba wheat field.





One of the 3-mill. dollar compressor stations (right) which push Alberta gas south to the U.S. pipeline.

Laying pipeline through swamps (left) required powerful pumps to remove water before dropping in the pipe section.



powerful self-tracking bulldozers piled muck high along the trench allowing pure weight to squeeze out the water in the ditch as the muck settled into it.

When the 35-in. diameter line finally reached Emerson, the connection section was jointly welded into place by Canadian and United States welders, making the final connection which attached Trans-Canada to the 504-mile transmission line of the Midwestern Gas Transmission Company from Emerson, Man. to Marshfield, Wisconsin, U.S.

The 504 miles of 30-in. main in Wisconsin runs for the most part through dairy farm lands, and crews met with none of the difficulties and hardships experienced by the Canadians. The Midwestern transmission pipeline passes through the State of Minnesota, which at the present time does not plan to tap the main for her own domestic purposes. The main purpose of the gas line is to feed into the industrial centres of Wisconsin and down to Chicago, Illinois. Most of this territory depends upon manufactured gas.

The line also hooks up to the Michigan-Wisconsin Pipeline Company, and then up to the Michigan Gas & Electric Co. bringing the Canadian gas right back up to Canada's backdoor at Detroit across the river from Windsor, Ontario.

The direct and readily apparent benefit to Canada from the Emerson export is that it will bring in some $20 mill. a year in U.S. funds—a most valuable contribution to the balance of Canada's trade. A further advantage is in the stimulation of new exploration for gas in Western Canada.

New demand creates the need for additional gas transmission facilities of which Trans-Canada has thousands of miles yet to build for more gas from the fields, creating more jobs for Canadians.

As an example, six new compressor stations had to be built in Saskatchewan and Manitoba to drive the increased volumes of Alberta gas south into the U.S. Each station cost approximately $3 mill. and ranges from 10,500 to 5,100 h.p. each.

There are also more benefits. The more gas flowing through the Trans-Canada system, the more efficient the pipeline becomes, and as a consequence the more economical natural gas becomes for the steadily growing energy markets of Canada.

Today Alberta gas is flowing south and into thousands of miles of U.S. distributing systems in the midwest.

At the present time the pipeline is being extended north and north-east through some of the toughest pipeline laying country in the world.

BOOK REVIEWS

CAREERS IN FUEL

THE importance of fuel and its efficient utilisation has never been greater than it is today, and in order that the knowledge gained in this respect may be properly applied as well as developed even further, specially trained personnel is essential.

There are perhaps many now leaving school who could with advantage make fuel technology their career, but who may be unaware of the many openings available, outside those industries dealing directly with fuel production or its distribution.

In order that this possible lack of awareness may be obviated, the Institute of Fuel has recently published an attractively produced booklet, which sets out all the relevant facts clearly and succinctly, and in a way that will appeal to the youth about to make up his mind about his future career.

This booklet is broadly divided into sections dealing with the importance of fuel in the world and its consumption in the United Kingdom, the need for the fuel specialist and his training, the opportunities open to the young man making fuel technology his career, and his future prospects.

A very useful diagram shows how, once embarked upon his career, whatever his background, education or attainments, he may arrive at the top in the world of fuel before him. A map showing the places of study, whether university or technical college, where courses in fuel technology are run throughout Great Britain, will assure the student that his geographical location is no bar to study.

In his foreword to the booklet, the Minister of Power, Mr. Richard Wood, expresses the hope that parents and career masters will also find its information of use.

INSTITUTE OF FUEL

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ADMINISTRATORS IN ACTION

VOLUME I

By F. M. G. Willson

'ADMINISTRATORS in Action', volume one, is the first of a series of books sponsored by the Royal Institute of Public Administration designed to shed light on the detailed processes of day-to-day administration.

This volume deals with five episodes which took place recently, showing how the British system of administration functioned in each case. Two of these cases involved central government, two involved local government, and one the nationalised industries.

From central government is the story of a personnel problem handled by a central department, and the history of the negotiation of a financial agreement between the United Kingdom and Spain.

The story of the movement of the wholesale fruit and vegetable market from the centre of Coventry to its suburbs, and that of the administrative difficulties created by a problem family illustrate administration in local government. Finally, from the nationalised industries is the description of the centralisation and mechanisation of the accounting procedures of the South Western Electricity Board.

GEORGE ALLEN AND UNWIN LTD.
PRICE 35s.

★

INVESTMENT IN THE COMMUNITY COALMINING AND IRON AND STEEL INDUSTRIES

THE report on the 1961 survey by the European Coal and Steel Community into 'Investment in the Community Coalmining and Iron and Steel Industries' has recently been published, for the ninth year in succession.

This report is well supplied with statistical tables and graphs to illustrate the figures given as at January 1, 1961, in this detailed survey of past and future investment by these industries and its foreseeable effects on production potential. The survey covers all but very small enterprises accounting for less than .8% of the Community's total coal production and less than 1.8% of its total steel production.

EUROPEAN COAL AND STEEL COMMUNITY REPORT.

PUBLICATIONS DEPARTMENTS OF THE EUROPEAN COMMUNITIES.

Industrial accidents

A NEW approach to accident prevention in industry by training foremen in safety measures, is being launched by the British Safety Council.

The Council is planning a nationwide series of training courses directed at foremen. The courses, the first of which will be held in London in October, are being organised by Mr. Arthur Greenslade, who has joined the Council as head of the Training Division.

The courses will last for four half days, and each will be followed by an examination.

Application forms and further details are available from Safety House, 60, Westbourne Grove, London, W.2.

NEWS SUPPLEMENT

HOW THE OTHER SIDE FARED

THE rate of increase in the use of electricity last year was the highest for 10 years, according to the annual reports of the Electricity Council, the Central Electricity Generating Board and the 12 area Boards, quoted in *The Times.*

Sales increased by 12.1% during the year. The greatest single increase was in sales to domestic consumers, which rose by 17.6%. In the industrial sector sales increased by 8.2%, with the iron and steel and the chemical industries recording the greatest increases.

One result of the unexpectedly heavy sales of electricity during the year is that the Central Electricity Generating Board had a deficit of £1,500,000 on the year's working compared with surpluses of £5,400,000 and £10,800,000 in the two previous years.

Sir Christopher Hinton, Chairman of the Board, describing this paradoxical state of affairs, said 'they hoped it would not be repeated.'

The price of electricity is unlikely to go up generally before March, 1963, but local increases are to be expected before then in the area covered by the South Wales and the South Eastern Boards. In 1963-64, however, a national increase in retail tariffs is to be expected.

If for no other reason, this will be necessary because the electricity supply industry have now found that to meet the rising demand for electricity they will have to spend £200m. more on plant during the next four years than their capital estimates originally provided for.

The pattern of tariffs over the next few years was forecast by Sir Robertson King, chairman of the Electricity Council, at a Press conference in London to introduce the reports.

It is now expected that the industry will have to face a maximum demand of over 33,000 megawatts in the winter of 1964-65, which is more than 12% above the forecast made in 1958.

New powers urged to run giant gasworks

FORECASTING the building of giant gasworks as a logical step towards cheaper gas, Sir Henry Jones, Chairman of the Gas Council, speaking at a recent luncheon in London, suggested that production on such a scale by single units would be beyond the scope of the present area boards, reports *The Times.*

He proposed that the Gas Council should have new powers to run gas production plants. The Gas Council and the National Coal Board have jointly commissioned design studies, it will be recalled, for three possible new production plants based on the Lurgi process on sites near large collieries in the East Midlands.

A single gasworks of the type visualised would need about 1 mill. tons of coal a year.

It is unlikely that more than one big Lurgi works would be built within the next few years because of the difficulty of absorbing new capacity into the national gas system. More than one such works might mean the wholesale closure of small, traditional gasworks.

LIQUID METHANE

The Gas Council are still awaiting Government permission to go ahead with their other scheme for cheaper gas—the importation of liquid methane obtained from the natural gas wells of the Sahara.

Sir Henry Jones said that if the Gas Council were allowed to proceed they would be in a position to supply seven area boards with natural gas amounting to about 12% of the national requirement.

The methane scheme, involving the Gas Council in a 50% interest in the tanker company which would convey the gas, and the provision of storage tanks in Britain and supply mains, would cost under £10 mill., Sir Henry estimated.

During the year ended March last the industry sold almost 3% more gas than in the previous year, and had a trading surplus of about £2 mill.

'NEXT BEST'

The *Financial Times* states: Sir Henry said that he would be 'very disappointed' if the Government did not give approval to the plan for importing liquid methane from the Sahara.

'But if the answer should be "No,"' he added, 'I would not pack up. I would say, 'What is the next best thing we could do?'

An outline of the Gas Council's methane project was presented to the Minister of Power some months ago. Additional information has been supplied since then, and a reply is now awaited.

The *Daily Express* reported Sir Henry as saying that there had been a stampede for gas appliances for domestic water-heating and air-warming, 26,000 being installed in British homes against 13,000 in the previous year. The industrial demand for gas had also soared.

Winter comfort for shoppers

WINTER with its frost and snow will hold no terrors for housewives in Ilford, Essex, if the Council approves a North Thames Gas Board scheme to install heaters on the footpath outside their showrooms.

If other shopkeepers can be persuaded to follow suit, shoppers will find the experiment adds greatly to their comfort during the more gloomy part of the year.

But the Works Committee suggests that if the heaters cause an obstruction and the police object—then the Gas Board will have to remove them.

POWER FOR INDUSTRY

THE Minister of Power, Mr. Richard Wood, will open the Northern Exhibition of Fuel and Power for Industry at the Queens Hall, Leeds, on Wednesday, October 18, at noon.

This exhibition may give valuable assistance to industrialists in the all-important problem of reducing fuel overheads and increasing plant efficiency.

'SHOESTRING' HOSTESSES

ABOUT 150 girls from secondary schools at Swindon have been learning how to be successful hostesses on a 'shoestring' budget.

The girls have been attending courses on home entertaining at budget prices. The courses were organised by a margarine firm in conjunction with the South Western Gas Board.

Cookery organisation and flower arrangement were among the subjects covered, and the girls took part in some of the demonstrations.

MORE NATURAL GAS DISCOVERIES IN ITALY

IMPORTANT discoveries of natural gas have been made in Italy in the last few months says the Rome correspondent of the *Financial Times*.

The most recent discovery is near Vasto, on the Adriatic coast of the Abruzzo region. Ascertained reserves in these fields amount to 12,500 mill. cu.m. of methane, but the indications are this figure will greatly increase as research proceeds in the area.

An even more important find has been made in Gagliano, near Enna, in Sicily. Ascertained reserves here already amount to 10,000 mill. cu.m., but are expected to increase to perhaps double this figure when exploration has been completed.

More than encouraging

Prospects for the Pisticci gas field, near the Ferrandina field in Luciana, in the south, where three major industrial plants are to be built by the Montecatini Chemical group, the E.N.I.-A.G.I.P. Corporation and the Ceramica Pozzi Company are more than encouraging.

In northern Italy a really important find has been made offshore in the Adriatic near Ravenna.

Three productive wells have already been sunk and a new offshore drilling platform of the E.N.I.-A.G.I.P. Corporation, the Perro Negro, has just reached the area to drill other wells.

The natural gas found at Gagliano, in Sicily, like the Cortemaggiore gas in Northern Italy, contains a considerable percentage of gasoline and a plant to extract it is already being assembled on the site.

The construction of a pipeline to convey the natural gas of Vasto to Terni and Rome has been decided, and should be completed by the end of 1963.

Gas exhibits for five trade shows

DURING October, the Scottish Gas Board will take part in five trade exhibitions to be held in the Central and Northern Division Area.

These are in Kirkcaldy Town Hall from Oct. 5-14; St. Monance Town Hall, Oct. 7-14; Perth City Hall, Oct. 17-21; the Drill Hall, Bruce Street, Dunfermline, Oct. 18-28; and in Stornoway Town Hall, Oct. 23-28.

On display at each of these exhibitions will be an extensive range of the most up-to-date gas heating and kitchen appliances. Two home service advisers will be on duty to demonstrate the cooking of quick grills on the most modern gas cookers.

THE AINTREE PRINCESS

A LIMITED advertising programme in the North Thames area is being conducted by Robinsons, makers of the Aintree Princess water heater. To launch this publicity scheme, the makers held two parties when sales personnel of the North Thames Gas Board, together with dealers' representatives, were invited to meet Mr. A. B. Seton, Resident Director of U.G.I., and to hear Mr. R. A. Hentch, Technical Director, explain the working details and the technical advantages of the Aintree Princess.

New Phimax source will supply 1,200 tons weekly

TO meet an anticipated heavy demand for Phimax this winter the North Western Gas Board has arranged to start production at its Wigan works, with an initial weekly output of 1,200 tons.

Sales from this works will be restricted to the area of the Board's South Lancashire Group, which embraces Wigan, Warrington, St. Helens, Newton-le-Willows, Ashton-in-Makerfield, Golborne and Widnes.

Supplies will be available to merchants as from October 25, and to the general public on November 1 next.

The Board's delivered price for 1 to 10 cwt. lots will be 11s. 7d. per cwt., with an additional 1d. per cwt, where delivery is required in certain rural areas.

Production at Wigan will mean that Phimax will now be available in five out of the Board's eight Group areas. The other areas in which it can be purchased are Greater Manchester, Central Lancashire, North Cheshire and Wirral.

Since it was first placed on the market in the winter of 1956, the tonnage sold each year has grown steadily, rising from 28,081 tons in the first full year to 104,899 tons in the year ended March 31, 1961.

B.S.I. HAS A RECORD YEAR

THE year 1960-61 was another year of record activity and output for the British Standards Institution. For the first time, the number of new and revised British Standards published topped the 300 mark—well over one for each working day of the year.

Sales of British Standards rose to 1,158,000 compared with the previous record figure of 1,097,000 in 1959-60 (about one quarter went overseas).

International standards activities made increasing demands and so did work on testing and approval of products. Furthermore, there was a sharp increase in the amount of new work added to the already large programme.

GAS STRUCK AT WINNATHOOLA

GAS has been struck at Winnathoola, Australia, between 4,465 and 4,521 ft., states the *Financial Times*. The strike was made by the Associated Oil Group's No. 1 well.

A drill stem test has produced 600,000 cu.ft. of gas a day. The well is drilling ahead. A small gas show is holding up oil developments at No. 2 well on Bathurst Island at 1,024 ft.

North Western Board Appointments

HIGH LEVEL CHANGES

THE North Western Gas Board recently announced that Mr. John Wadsworth, assistant secretary of the Board, has been appointed Secretary, and Mr. Arthur Miller, administrative assistant, has been appointed Assistant Secretary.

Mr. R. E. Stead, group accountant of the Board's Manchester Group, has been appointed General Manager of the Board's West Lancashire Group in succession to Mr. A. K. Collinge who is retiring.

Mr. S. Pinson, assistant accountant, Board Headquarters, has been appointed Group Accountant of the Manchester Group.

Mr. Colin W. Smettem, commercial manager of the Board's Mersey Group, has been appointed Commercial Manager at Board H.Q., and Mr. George King, sales manager of general domestic sales in the Board's Mersey Group, will succeed Mr. Smettem as Commercial Manager of the Mersey Group.

Mr. Smettem's new appointment marks an important departure in the Board's organisational pattern; for the first time all sales activities of the Board will now be placed under single direction.

Mr. John Wadsworth, who is 44, came to the Board as assistant secretary in 1951.

While with the Board, much of the work of organising the Board's area conferences has fallen on his shoulders, and he has been responsible also for the day-by-day administration of the Board secretariat.

Mr. Arthur Miller, who is 37, began has career in Manchester Corporation Gas Department, and in 1949 came to Board Headquarters as clerical assistant. He was appointed administrative assistant in 1957.

C. W. Smettem.

G. King.

Mr. R. E. Stead, 44, joined the Cambridge Division of the Eastern Gas Board as assistant divisional accountant in 1949, and a year later went to the North Eastern Gas Board H.Q. as assistant accountant.

In 1953 he was appointed group accountant at Bradford. In 1957 he came to the North Western Gas Board as group accountant in Manchester.

Mr. S. Pinson, 47, in 1950 joined the North Western Gas Board as assistant group accountant for Blackburn and Burnley, and in 1954 became group accountant of the East Lancashire

R. E. Stead.

S. Pinson.

Group, where he continued until 1959 when the East Lancashire Group was integrated with the Central Lancashire Group.

Mr. Colin W. Smettem, who is 45, joined the Board at its formation as assistant secretary, but shortly afterwards was appointed the Board's solicitor.

Mr. Smettem was selected by the Board to attend a three-month course at Henley-on-Thames.

A little more than a year ago he was appointed commercial manager of the Mersey Group (Liverpool and Wirral combined) with responsibility for all the commercial activities of the Group.

Mr. George King, who is 45, joined the Liverpool Gas Company in 1937 as a district salesman.

In 1959 he was appointed group showrooms manager of the newly-formed

J. Wadsworth.

A. Miller.

Mersey Group, and in 1961 sales manager, general domestic sales.

THE INSTITUTION

Tragedy casts shadow over I.G.E. meeting

A CERTAIN shadow was cast over the meeting of the Manchester and District Section of the I.G.E. on September 20 by the death a few days previously of Mr. Tom Pickthall, group production engineer of the Mersey Group, which was described by the Chairman, Mr. N. C. Sturrock, as 'a loss to the Section and to the gas industry as a whole.'

In spite of this tragedy—the funeral, which was held that morning, seriously depleted attendance—a substantial number visited Rotherham to inspect the Car House works; and perhaps because the Section seldom visits this 'fringe' part of its area, the hosts for the day, the East Midlands Gas Board, entertained members to lunch at the Assembly Rooms.

After the loyal toast had been proposed by Mr. Sturrock, Mr. E. H. Harmon, Deputy Chairman of the Board, proposed the toast of the Manchester and District Section.

The Section, he said, had a fine record of achievement and he congratulated Mr. Sturrock on the high standard of his own distinguished career in the industry.

The Section had provided a number of presidents of the I.G.E., and he was sorry that Mr. W. Hodkinson, the immediate past president of the Section and currently Junior Vice President of the I.G.E., was unable to be present.

PERSONAL NOTES

DR. E. J. DICKINSON, previously of the D.S.I.R., British Road Tar Association, and most recently principal research officer of the Coal Research Division of C.S.I.R.O., in Australia, has joined the Burt, Boulton & Haywood organisation. He will be responsible, jointly with MR. D. H. SPRANKLIN, for group development and research in the tar distillation and chemical fields.

SIR LEONARD OWEN, in anticipation of his ceasing to be a full-time member of the United Kingdom Atomic Energy Authority, has accepted an invitation to join the Board of United Gas Industries. He will take over the Chairmanship of two of the Company's subsidiaries—Dowson & Mason and Vacuum Metallurgical Developments.

MR. R. W. G. LANE, distribution engineer at Swansea, and group distribution officer of the Swansea Group since September, 1957, has been appointed to the post of Deputy Distribution Engineer at Cardiff.

MR. J. JONES, O.B.E., industrial relations director of the West Midlands Division of the National Coal Board, is retiring for health reasons.

THE RT. HON. THE EARL OF BALFOUR, of Whittingehame, East Lothian, has been re-appointed a part-time member of the Scottish Gas Board.

MR. D. S. BEARD has been appointed Technical Sales Director of Griffin & George (Sales) Ltd. He joined the company in 1960.

MR. G. C. BRIGDEN has been appointed Secretary of the Northern (Northumberland and Cumberland) Division of the National Coal Board.

MR. L. W. BLUNDELL, of the North Thames Gas Board, has been elected to serve on the British Standards Institution General Council, Chemical Division. MR. H. A. PURSEY, of Turners Asbestos Cement Co. Ltd., has been elected to the Council, building division, and DR. L. PFEIL, of the International Nickel Co. (Mond) Ltd., has been elected to the Council's engineering division.

MR. E. S. HARRIS, who recently retired from the post of manager of the New Housing Section of the North Thames Gas Board, attended a farewell ceremony held in his honour at the Board's offices in Westminster. He was presented with a cheque from his colleagues by MR. N. R. JUNKISON, Manager of the Board's Headquarters Division.

MR. D. C. H. B. LEWIS has been appointed Technical Sales Representative of the Industrial Products Division of the North British Rubber Company, and will operate in South Wales and the West of England. Mr. Lewis was at one time with B.T.R. Industries.

MR. G. CUNLIFFE, Managing Director of Norcros Ltd., has been elected President of the British Standards Institution in succession to MR. R. E. HUFFAM. He had previously been elected chairman of the B.S.I. General Council.

MR. J. BRASS has been appointed Chairman of the West Midlands Division of the National Coal Board. He was previously production director of the Northern Division.

MR. H. JOHNSTON, chief engineer to the North Eastern Gas Board, is retiring after 45 years with the gas industry.

OBITUARY

MR. TOM PICKTHALL, group production engineer of the Mersey Group, North Western Gas Board, has died in an accident at the age of 48. He took up his duties as production engineer of the Board's Mersey Group only on July 1, 1961, after a highly successful record in the same post with the Central Lancashire Group. Mr. Pickthall came to the Board at its formation from the U.K. Gas Corporation as assistant engineer and manager of the North Cheshire Group of gas undertakings. From 1950 to 1954 he was North Cheshire Group production engineer and for the next seven years group production engineer of the Central Lancashire Group.

PROFESSOR H. V. A. BRISCOE has died at the age of 73. He was the first director of the Northern Coke Research Committee's laboratory, and from 1932 to 1954 University Professor of Inorganic Chemistry, Imperial College, Royal College of Science.

COMING EVENTS

October 6. — LONDON AND SOUTHERN JUNIORS: Westminster Technical College, Vincent Square, London, S.W.1. Presidential address. 6.30 p.m.

October 11.—FUEL LUNCHEON CLUB, NORTH WESTERN SECTION: Engineers' Club, Albert Square, Manchester 2. Annual general meeting. 1.30 p.m.

October 12.—LONDON AND SOUTHERN JUNIORS: Visit to East Greenwich Works, South Eastern Gas Board. 2.15 p.m.

October 14. — YORKSHIRE JUNIORS: North Eastern Gas Board, Bridge Street, Leeds. Annual general meeting. 2.30 p.m.

October 17.—I.G.E., LONDON AND SOUTHERN SECTION: Caxton Hall, Caxton Street, Westminster, London, S.W.1. Annual general meeting. 'The Organisation and Operation of a Distribution Department,' by W. E. Medhurst. 2.45 p.m.

October 19.—THE COMBUSTION ENGINEERING ASSOCIATION: Leeds. Northern Exhibition of Fuel and Power for Industry.

TRADE NOTES

NIFE BATTERIES, Redditch, Worcs, has arranged a private exhibition of Nife portable safety lamps at the Park Hotel, Cardiff, from November 20-23. Admission is free and the exhibition will be open from 10 a.m. to 6 p.m. A comprehensive range of portable industrial lamps will be on view. Tickets can be obtained from Nife Batteries, Union Street, Redditch, Worcs. (Tel.: Redditch 2355.)

HEYES & CO. LTD., of Wigan, has received an order from the N.C.B. North Eastern Division for another set of intrinsically safe control and indication equipment for use in a new N.C.B. methane gas drainage system at Rossington Colliery, near Doncaster. The methane will be pumped up from the coal face and will be supplied to gas boards or used for the firing of colliery boilers.

THE PLESSEY COMPANY LTD., Ilford, Essex, has received a contract for a remote control and telemetering installation for the Norwich Division of the Eastern Gas Board. The system, which has its control centre at Norwich, will cover eight gasholder sites in the Division—Lowestoft, Southwold, Beccles, Diss, Halesworth, Harleston, Bungay and Lodden.

OPTOSHIELD LTD., London, E.C.1, the manufacturers of eye protection and other safety products, are transferring all their production and development departments to more spacious accommodation at Watford. The Sales Department and Head Office remain at 146, Clerkenwell Road, London, E.C.1, and orders should continue to be sent there.

THE BRITISH OXYGEN CO. LTD., London, S.W.1, has added a new tanker to its 1,100-strong commercial fleet. This vehicle carries the liquid equivalent of 150,000 cu.ft. of gaseous oxygen—equalling about 12 lorry-loads of cylinders. It can also carry liquid nitrogen or liquid argon.

SINGLEHURST ENGINEERING LTD., specialists in industrial hose and high pressure flexible pipes and fittings, have moved to larger premises with greater facilities at 72-76, Clun Street (off Carlisle Street), Sheffield 4. The telephone number remains as Sheffield 29919.

HEAD WRIGHTSON PROCESSES LTD., a subsidiary of Head Wrightson & Co. Ltd., London, S.W.1, has been awarded a water treatment plant contract by Esso Petroleum Co. Ltd., worth approximately £150,000, for their Fawley refinery.

WATTS METAL INDUSTRIES LTD., boiler manufacturers of Lydney, Gloucestershire, announce a change of telephone numbers to Lydney 436 and 437.